Leinco Technologies, Inc.
excellence in early discovery research™

Human CD19 (Tafasitamab) Antibody

Purified No Carrier Protein

Biosimilar Recombinant Human Monoclonal Antibody

Product Information

Product No.:	LT3100
Clone:	MOR-208
Isotype:	Human IgG1κ
Storage:	Sterile 2-8°C

Product Description

Specificity:
This non-therapeutic biosimilar antibody uses the same variable region sequence as the therapeutic antibody Tafasitamab. This product is for research use only.Tafasitamab activity is directed against human CD19.

Antigen Distribution:
CD19 is a surface antigen present on all B cells (healthy and malignant) except hematopoietic stem cells and plasma cells; it is highly conserved in B-cell malignancies.

Background:
CD19 is a B cell surface glycoprotein that enhances B cell receptor signaling and tumor cell proliferation 1. CD19 is an attractive immunotherapy target for cancers of lymphoid origin due to its early and persistent expression throughout B cell maturation 2.

Tafasitamab is a humanized anti-CD19 monoclonal antibody developed by MorphoSys AG under a license from Xencor for the treatment of B cell malignancies 1. The chimeric antibody was engineered by combining the variable region genes of mouse anti-CD19 antibody (clone 4G7) with human light chain κ and heavy chain constant regions 1,2. Light and heavy chain constructs were co-transfected into 293E cells and antibodies were purified using protein A chromatography 2. Additionally, the Fv of 4G7 was humanized, affinity-matured using library design automation, and substitutions S239D/I332E were introduced to increase Fcγ receptor affinity to human 2, mouse 2, and cynomolgus monkey 3 FcγRs, with FcγRIIIa affinity being particularly enhanced 2.

Tafasitamab mediates B cell lysis via apoptosis and immune effector mechanisms including antibody-dependent cellular cytotoxicity (ADCC) 2,4 and antibody-dependent cellular phagocytosis 2. Tafasitamab also increases antiproliferative activity and inhibits lymphoma growth in mouse xenograft models. ADCC is mediated by natural killer cells 5 through a granzyme B-dependent mechanism that is further enhanced by lenalidomide 6,7.

Tafasitamab is also known as XmAb5574 1.

Known Reactivity Species:
Human

Expression Host:
HEK-293 Cells

Format:
Purified No Carrier Protein

Immunogen:
Human CD19

Formulation

This biosimilar antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Purity
≥95% by SDS Page, ≥95% monomer by analytical SEC

Endotoxin
< 1.0 EU/mg as determined by the LAL method

Storage and Stability
Functional grade preclinical antibodies may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C.
Avoid Repeated Freeze Thaw Cycles.

Product Preparation
Recombinant biosimilar antibodies are manufactured in an animal free facility using only in vitro protein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.
Other Applications Reported in Literature:
ELISA
WB
IP
FA
FC
IF
IF Microscopy

Country of Origin
USA

References
1. Hoy SM. Tafasitamab: First Approval. Drugs. 80(16):1731-1737. 2020.
2. Horton HM, Bernett MJ, Pong E, et al. Cancer Res. 68(19):8049-8057. 2008.
3. Zalevsky J, Leung IW, Karki S, et al. Blood. 113(16):3735-3743. 2009.
4. Rafiq S, Cheney C, Mo X, et al. Leukemia. 26(7):1720-1722. 2012.
5. Chan WK, Kung Sutherland M, Li Y, et al. Clin Cancer Res. 18(22):6296-6305. 2012.
6. Awan FT, Lapalombella R, Trotta R, et al. Blood. 115(6):1204-1213. 2010.
7. Kellner C, Zhukovsky EA, Pötzke A, et al. Leukemia. 27(7):1595-1598. 2013.
8. Woyach JA, Awan F, Flinn IW, et al. Blood. 124(24):3553-3560. 2014.